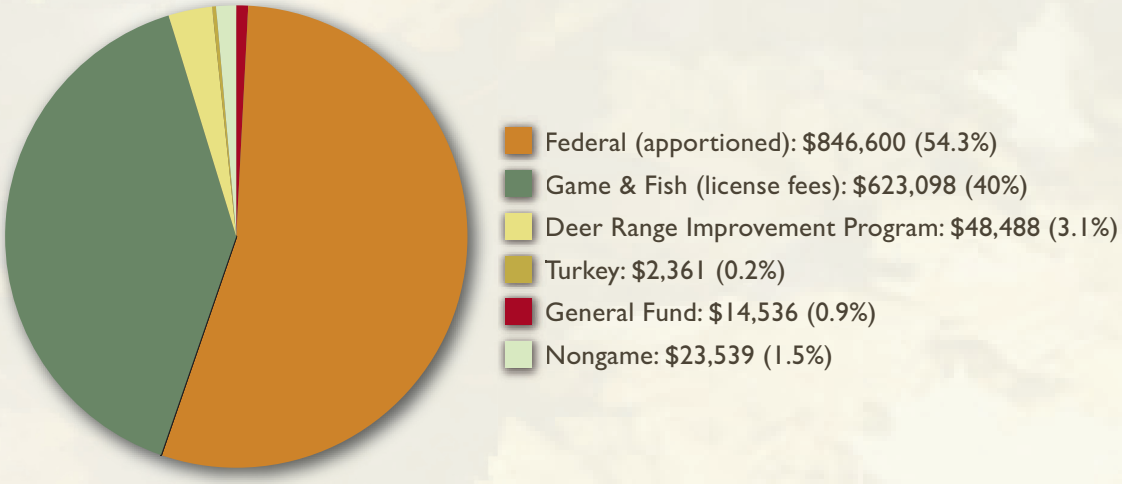
# Research and Monitoring

# Fiscal Year 2010
# Research Expenditures by Fund Source




## The Wildlife Division invested:

- 2,705 hours on the design and implementation plans for research projects;
- 1,114 hours doing habitat inventory on 51,769 acres; 72,643 were planned;
- 891 hours on statewide surveys of Species of Greatest Conservation Need; and
- 680 hours on biological surveys and community classifications by evaluating two models.

The Wildlife Division continues its collaborative relationship with the Partnership for Ecosystem Research and Management (PERM) at Michigan State University (MSU). One notable PERM research project initiated in the past year is to evaluate the effectiveness of incorporating private deer hunting cooperatives into Michigan's traditional deer management practices. Initial results suggest that private deer cooperatives are more effective at habitat management and overall deer harvest than hunters not affiliated with such a group. This may be influenced by social networks, group dynamics and social capital generated by the cooperative.

Another collaborative research project at MSU is studying how retained structures in clear-cut forests help maintain biodiversity. The research, conducted with the assistance of the Forest Management Division, involves aspen management in the Cadillac and Traverse City forest management units. Researchers sampled 160 aspen-harvest sites in 2010, surveying for red-eyed vireos, ovenbirds and Nashville warblers as indicators of how differing management prescriptions affect wildlife populations.

The Wildlife Division – in conjunction with the Upper Mississippi and Great Lakes Venture, MSU, the Michigan State Police Aviation Section, the Safari Club International (SCI) Michigan Involvement Committee and Winous Point Marsh Conservancy – has initiated a three-year research project to conduct spring and fall diving duck surveys on Lake St. Clair, the Detroit River and western Lake Erie. The project is designed to help division staff understand declining scaup populations, and declining use of the area by canvasbacks and other diving ducks.

In collaboration with the University of Wisconsin and SCI's Michigan Involvement Committee, the Wildlife Division has begun a five-year study of black bear expansion into southern Michigan (generally, south of a line from Bay City to Muskegon). So far, several bears have been collared with GPS transmitters. A similar project is ongoing in Wisconsin, where the bear population is also expanding southward into agricultural areas.

The division continues to work with MSU to use genetic techniques to help understand the northern Lower Peninsula bear population. Using DNA from teeth extracted from harvested bears and from bear hair collected at baited stations, the current study will examine the relatedness of individual bears. This information, collected over several generations, can be used to identify source areas (places from which bears expand their range) and sink areas (places where mortality exceeds production) in a heavily hunted bear population.

## Predator/Prey Study

Upper Peninsula deer populations took a big hit in the mid-1990s after back-to-back severe winters, and they have not yet responded in the way many had hoped. As a result, the Wildlife Division, in conjunction with Mississippi State University, has begun a major research project designed to find out why. Role of Predators, Winter Weather and Habitat on White-Tailed Deer Fawn Survival is studying fawn mortality and the role that four predators – bears, wolves, coyotes and bobcats – play in the equation. The research, which is now being completed in a low-snowfall zone, involves electronic collaring of both deer fawns and predators. Researchers monitor collared fawns to determine their survival and investigate mortality signals to determine the cause of death. They use global positioning system collars on predators to intensively monitor their movements and investigate locations where predators spend significant time to determine if they have killed a fawn. The research ideally will be repeated in medium- and high-snowfall zones. In addition, researchers are conducting vegetative studies at fawn birth sites and mortality sites and collecting weather data to determine how these factors interact with predation. The research is being funded by SCI Foundation, the Michigan Involvement Committee of SCI, and SCI's Northwoods Chapter. Additional funding is provided by U.P. Whitetails of Menominee County and Wildlife Unlimited of Delta County, as well as federal funds matched with state funds.

## Harvest and Opinion Surveys

Eight reports from surveys of hunters and the public were finalized during 2010, while another seven were initiated. Reports completed include the 2008 license year bobcat survey and 2009 surveys of spring turkey, fall turkey, deer, elk and bear. Harvest surveys initiated in 2010, to be published in 2011, include waterfowl, small game, fur harvester, marten/fisher, otter/beaver and spring turkey.

Harvest surveys provide biologists critical data to make wildlife management recommendations for the following years. To access the completed surveys, go to www.michigan.gov/hunting and click on Wildlife Surveys and Reports.

*Pictured from left to right: Wildlife Division survey specialist Brian Frawley conducts harvest and opinion surveys that provide critical data for making wildlife management recommendations; a collared deer from the predator-prey research study; a Wildlife Division staff member recording survey feedback.*

## Bear Landowner Survey

In 2010, the Wildlife Division completed a survey of landowners in portions of the Red Oak Bear Management Unit about attitudes and experiences with black bears. The survey, which targeted landowners in Alcona, Alpena, Montmorency and Oscoda counties, indicated that 48 percent of the respondents were satisfied with current management, while only 15 percent were dissatisfied (the rest were neutral). The survey showed that 33 percent of the landowners experienced some sort of bear damage, but two-thirds of that damage involved bird feeders. In all, 69 percent of landowners said that that they – not the Wildlife Division – were largely responsible for preventing bear damage, and 75 percent said that they thought simple precautions would prevent such damage. A majority (55 percent) said that they wanted to have bears on their property. Only 14 percent said there were too many bears in the area.

## Deer Check and Other Monitoring Programs

Monitoring the status of Michigan's game and non-game wildlife species requires the efforts of virtually every Wildlife Division employee. Wildlife Division staff members participate in survey activities to monitor wolves, upland game birds, elk, moose, deer, furbearers, bear, waterfowl, Karner blue butterflies, Kirtland's warbler, and frogs and toads throughout the state. Among other notable accomplishments in FY 2010, the Wildlife Division collected biological data on 29,308 harvested deer brought to check stations; counted 557 elk on 86 aerial survey plots for an estimate of 778 individuals in the winter herd; marked 188 bears in the Upper Peninsula with tetracycline to generate an estimate following recapture in the 2010 harvest; worked with 185 grouse and woodcock hunters to monitor the harvestable populations of those species; and counted singing male Kirtland's warblers throughout the bird's range. Results from field surveys helped support efforts to remove wolves from the Endangered Species List and decisions to reduce elk hunt permits, reduce bear license quotas on Drummond Island and open a sharp-tailed grouse season for the first time since 1996. The Wildlife Division also continues to evaluate data collection and analysis techniques.

## Biometrics

Analyzing tooth specimens from certain species helps the Wildlife Division with estimating populations and setting harvest regulations. During fiscal year 2010, the division collected and processed tooth samples from 2,057 bear, 624 bobcats, 297 elk, 266 fisher, 247 marten and a number of other species – including deer, coyote and raccoon – as part of a population biometry survey. Thin, stained sections of each tooth are placed on a microscope slide, and cementum layers can be counted to estimate the age of each animal. For female bears, the spacing of these rings can also provide reproductive information. As part of an ongoing mark-recapture program, the bear tooth sections also are checked for a tetracycline biomarker to determine the year the animal was marked to estimate populations. Tooth measurements and DNA analyses can also reveal the sex of the animals, a metric useful for population modeling.

## Frog and Toad Surveys

Michigan is home to 13 native frog and toad species. In recent years, many observers have been concerned with the apparent rarity, decline and/or population die-offs of several of these species. Since 1996, when the annual frog and toad survey began, data has been submitted from all 83 Michigan counties, with an average of nearly 250 survey routes reporting each year. There are 50 routes that have submitted data all 15 years of the survey. The survey has confirmed that Michigan has stable populations for most species, but long-term trends require many years of data before significant and meaningful information can be calculated. Hundreds of volunteers help with this survey, coordinated by the Wildlife Division, each year.